The Weizmann Institute of Science
Faculty of Mathematics and Computer Science

Foundations of Computer Science Seminar

Room 155, Ziskind Building
on Monday, Jun 17, 2024
at 11:15

Dana Moshkovitz
UT Austin

will speak on

Coding Theory in Almost-Linear Time and Sub-Linear Space

Abstract:
Typical time-efficient encoding and decoding algorithms for error correcting codes use linear space. We construct asymptotically good codes that can be deterministically encoded in almost linear time and sub-linear space, as well as asymptotically good codes that can be deterministically decoded in this complexity. The encodable codes are based on condenser graphs. The decodable codes are based on locally correctable codes and a new efficient derandomization method. We believe that the new derandomization method is of independent interest.

The talk is based on joint works with Joshua Cook (University of Texas at Austin).